



IFW16

RAW SEQUENCE LISTING

DATE: 08/11/2004

PATENT APPLICATION: US/09/462,962

TIME: 15:57:02

Input Set : D:\seqlist.txt

Output Set: N:\CRF4\08112004\I462962.raw



3 <110> APPLICANT: Jackson, Stephen P
 4 Lakin, Nicholas D
 5 Smith, Graeme CM
 7 <120> TITLE OF INVENTION: Interactions of ATM, ATR or DNA-PK with p53
 9 <130> FILE REFERENCE: MEWE-010
 11 <140> CURRENT APPLICATION NUMBER: US 09/462,962
 12 <141> CURRENT FILING DATE: 2001-06-25
 14 <150> PRIOR APPLICATION NUMBER: PCT/GB98/02115
 15 <151> PRIOR FILING DATE: 1998-07-16
 17 <150> PRIOR APPLICATION NUMBER: GB 9714971.0
 18 <151> PRIOR FILING DATE: 1997-07-16
 20 <160> NUMBER OF SEQ ID NOS: 26
 22 <170> SOFTWARE: PatentIn Ver. 2.1
 24 <210> SEQ ID NO: 1
 25 <211> LENGTH: 3056
 26 <212> TYPE: PRT
 27 <213> ORGANISM: Homo sapiens
 29 <400> SEQUENCE: 1
 30 Met Ser Leu Val Leu Asn Asp Leu Leu Ile Cys Cys Arg Gln Leu Glu
 31 1 5 10 15
 33 His Asp Arg Ala Thr Glu Arg Lys Lys Glu Val Glu Lys Phe Lys Arg
 34 20 25 30
 36 Leu Ile Arg Asp Pro Glu Thr Ile Lys His Leu Asp Arg His Ser Asp
 37 35 40 45
 39 Ser Lys Gln Gly Lys Tyr Leu Asn Trp Asp Ala Val Phe Arg Phe Leu
 40 50 55 60
 42 Gln Lys Tyr Ile Gln Lys Glu Thr Glu Cys Leu Arg Ile Ala Lys Pro
 43 65 70 75 80
 45 Asn Val Ser Ala Ser Thr Gln Ala Ser Arg Gln Lys Lys Met Gln Glu
 46 85 90 95
 48 Ile Ser Ser Leu Val Lys Tyr Phe Ile Lys Cys Ala Asn Arg Arg Ala
 49 100 105 110
 51 Pro Arg Leu Lys Cys Gln Glu Leu Leu Asn Tyr Ile Met Asp Thr Val
 52 115 120 125
 54 Lys Asp Ser Ser Asn Gly Ala Ile Tyr Gly Ala Asp Cys Ser Asn Ile
 55 130 135 140
 57 Leu Leu Lys Asp Ile Leu Ser Val Arg Lys Tyr Trp Cys Glu Ile Ser
 58 145 150 155 160
 60 Gln Gln Gln Trp Leu Glu Leu Phe Ser Val Tyr Phe Arg Leu Tyr Leu
 61 165 170 175
 63 Lys Pro Ser Gln Asp Val His Arg Val Leu Val Ala Arg Ile Ile His
 64 180 185 190
 66 Ala Val Thr Lys Gly Cys Cys Ser Gln Thr Asp Gly Leu Asn Ser Lys

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67          195          200          205
69 Phe Leu Asp Phe Phe Ser Lys Ala Ile Gln Cys Ala Arg Gln Glu Lys
70      210          215          220
72 Ser Ser Ser Gly Leu Asn His Ile Leu Ala Ala Leu Thr Ile Phe Leu
73 225          230          235          240
75 Lys Thr Leu Ala Val Asn Phe Arg Ile Arg Val Cys Glu Leu Gly Asp
76          245          250          255
78 Glu Ile Leu Pro Thr Leu Leu Tyr Ile Trp Thr Gln His Arg Leu Asn
79          260          265          270
81 Asp Ser Leu Lys Glu Val Ile Ile Glu Leu Phe Gln Leu Gln Ile Tyr
82      275          280          285
84 Ile His His Pro Lys Gly Ala Lys Thr Gln Glu Lys Gly Ala Tyr Glu
85      290          295          300
87 Ser Thr Lys Trp Arg Ser Ile Leu Tyr Asn Leu Tyr Asp Leu Leu Val
88 305          310          315          320
90 Asn Glu Ile Ser His Ile Gly Ser Arg Gly Lys Tyr Ser Ser Gly Phe
91          325          330          335
93 Arg Asn Ile Ala Val Lys Glu Asn Leu Ile Glu Leu Met Ala Asp Ile
94          340          345          350
96 Cys His Gln Val Phe Asn Glu Asp Thr Arg Ser Leu Glu Ile Ser Gln
97          355          360          365
99 Ser Tyr Thr Thr Thr Gln Arg Glu Ser Ser Asp Tyr Ser Val Pro Cys
100      370          375          380
102 Lys Arg Lys Lys Ile Glu Leu Gly Trp Glu Val Ile Lys Asp His Leu
103 385          390          395          400
105 Gln Lys Ser Gln Asn Asp Phe Asp Leu Val Pro Trp Leu Gln Ile Ala
106          405          410          415
108 Thr Gln Leu Ile Ser Lys Tyr Pro Ala Ser Leu Pro Asn Cys Glu Leu
109          420          425          430
111 Ser Pro Leu Leu Met Ile Leu Ser Gln Leu Leu Pro Gln Gln Arg His
112          435          440          445
114 Gly Glu Arg Thr Pro Tyr Val Leu Arg Cys Leu Thr Glu Val Ala Leu
115          450          455          460
117 Cys Gln Asp Lys Arg Ser Asn Leu Glu Ser Ser Gln Lys Ser Asp Leu
118 465          470          475          480
120 Leu Lys Leu Trp Asn Lys Ile Trp Cys Ile Thr Phe Arg Gly Ile Ser
121          485          490          495
123 Ser Glu Gln Ile Gln Ala Glu Asn Phe Gly Leu Leu Gly Ala Ile Ile
124          500          505          510
126 Gln Gly Ser Leu Val Glu Val Asp Arg Glu Phe Trp Lys Leu Phe Thr
127          515          520          525
129 Gly Ser Ala Cys Arg Pro Ser Cys Pro Ala Val Cys Cys Leu Thr Leu
130          530          535          540
132 Ala Leu Thr Thr Ser Ile Val Pro Gly Ala Val Lys Met Gly Ile Glu
133 545          550          555          560
135 Gln Asn Met Cys Glu Val Asn Arg Ser Phe Ser Leu Lys Glu Ser Ile
136          565          570          575
138 Met Lys Trp Leu Leu Phe Tyr Gln Leu Glu Gly Asp Leu Glu Asn Ser
139          580          585          590

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141 Thr Glu Val Pro Pro Ile Leu His Ser Asn Phe Pro His Leu Val Leu
142          595                      600                      605
144 Glu Lys Ile Leu Val Ser Leu Thr Met Lys Asn Cys Lys Ala Ala Met
145      610                      615                      620
147 Asn Phe Phe Gln Ser Val Pro Glu Cys Glu His His Gln Lys Asp Lys
148 625                      630                      635                      640
150 Glu Glu Leu Ser Phe Ser Glu Val Glu Glu Leu Phe Leu Gln Thr Thr
151          645                      650                      655
153 Phe Asp Lys Met Asp Phe Leu Thr Ile Val Arg Glu Cys Gly Ile Glu
154          660                      665                      670
156 Lys His Gln Ser Ser Ile Gly Phe Ser Val His Gln Asn Leu Lys Glu
157          675                      680                      685
159 Ser Leu Asp Arg Cys Leu Leu Gly Leu Ser Glu Gln Leu Leu Asn Asn
160      690                      695                      700
162 Tyr Ser Ser Glu Ile Thr Asn Ser Glu Thr Leu Val Arg Cys Ser Arg
163 705                      710                      715                      720
165 Leu Leu Val Gly Val Leu Gly Cys Tyr Cys Tyr Met Gly Val Ile Ala
166          725                      730                      735
168 Glu Glu Glu Ala Tyr Lys Ser Glu Leu Phe Gln Lys Ala Asn Ser Leu
169          740                      745                      750
171 Met Gln Cys Ala Gly Glu Ser Ile Thr Leu Phe Lys Asn Lys Thr Asn
172          755                      760                      765
174 Glu Glu Phe Arg Ile Gly Ser Leu Arg Asn Met Met Gln Leu Cys Thr
175      770                      775                      780
177 Arg Cys Leu Ser Asn Cys Thr Lys Lys Ser Pro Asn Lys Ile Ala Ser
178 785                      790                      795                      800
180 Gly Phe Phe Leu Arg Leu Leu Thr Ser Lys Leu Met Asn Asp Ile Ala
181          805                      810                      815
183 Asp Ile Cys Lys Ser Leu Ala Ser Phe Ile Lys Lys Pro Phe Asp Arg
184          820                      825                      830
186 Gly Glu Val Glu Ser Met Glu Asp Thr Asn Gly Asn Leu Met Glu
187          835                      840                      845
189 Val Glu Asp Gln Ser Ser Met Asn Leu Phe Asn Asp Tyr Pro Asp Ser
190      850                      855                      860
192 Ser Val Ser Asp Ala Asn Glu Pro Gly Glu Ser Gln Ser Thr Ile Gly
193 865                      870                      875                      880
195 Ala Ile Asn Pro Leu Ala Glu Glu Tyr Leu Ser Lys Gln Asp Leu Leu
196          885                      890                      895
198 Phe Leu Asp Met Leu Lys Phe Leu Cys Leu Cys Val Thr Thr Ala Gln
199          900                      905                      910
201 Thr Asn Thr Val Ser Phe Arg Ala Ala Asp Ile Arg Arg Lys Leu Leu
202          915                      920                      925
204 Met Leu Ile Asp Ser Ser Thr Leu Glu Pro Thr Lys Ser Leu His Leu
205      930                      935                      940
207 His Met Tyr Leu Met Leu Leu Lys Glu Leu Pro Gly Glu Glu Tyr Pro
208 945                      950                      955                      960
210 Leu Pro Met Glu Asp Val Leu Glu Leu Leu Lys Pro Leu Ser Asn Val
211          965                      970                      975
213 Cys Ser Leu Tyr Arg Arg Asp Gln Asp Val Cys Lys Thr Ile Leu Asn

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214          980          985          990
216 His Val Leu His Val Val Lys Asn Leu Gly Gln Ser Asn Met Asp Ser
217          995          1000          1005
219 Glu Asn Thr Arg Asp Ala Gln Gly Gln Phe Leu Thr Val Ile Gly Ala
220      1010          1015          1020
222 Phe Trp His Leu Thr Lys Glu Arg Lys Tyr Ile Phe Ser Val Arg Met
223 1025          1030          1035          1040
225 Ala Leu Val Asn Cys Leu Lys Thr Leu Leu Glu Ala Asp Pro Tyr Ser
226          1045          1050          1055
228 Lys Trp Ala Ile Leu Asn Val Met Gly Lys Asp Phe Pro Val Asn Glu
229      1060          1065          1070
231 Val Phe Thr Gln Phe Leu Ala Asp Asn His His Gln Val Arg Met Leu
232      1075          1080          1085
234 Ala Ala Glu Ser Ile Asn Arg Leu Phe Gln Asp Thr Lys Gly Asp Ser
235      1090          1095          1100
237 Ser Arg Leu Leu Lys Ala Leu Pro Leu Lys Leu Gln Gln Thr Ala Phe
238 1105          1110          1115          1120
240 Glu Asn Ala Tyr Leu Lys Ala Gln Glu Gly Met Arg Glu Met Ser His
241          1125          1130          1135
243 Ser Ala Glu Asn Pro Glu Thr Leu Asp Glu Ile Tyr Asn Arg Lys Ser
244          1140          1145          1150
246 Val Leu Leu Thr Leu Ile Ala Val Val Leu Ser Cys Ser Pro Ile Cys
247          1155          1160          1165
249 Glu Lys Gln Ala Leu Phe Ala Leu Cys Lys Ser Val Lys Glu Asn Gly
250      1170          1175          1180
252 Leu Glu Pro His Leu Val Lys Lys Val Leu Glu Lys Val Ser Glu Thr
253 1185          1190          1195          1200
255 Phe Gly Tyr Arg Arg Leu Glu Asp Phe Met Ala Ser His Leu Asp Tyr
256          1205          1210          1215
258 Leu Val Leu Glu Trp Leu Asn Leu Gln Asp Thr Glu Tyr Asn Leu Ser
259          1220          1225          1230
261 Ser Phe Pro Phe Ile Leu Leu Asn Tyr Thr Asn Ile Glu Asp Phe Tyr
262          1235          1240          1245
264 Arg Ser Cys Tyr Lys Val Leu Ile Pro His Leu Val Ile Arg Ser His
265      1250          1255          1260
267 Phe Asp Glu Val Lys Ser Ile Ala Asn Gln Ile Gln Glu Asp Trp Lys
268 1265          1270          1275          1280
270 Ser Leu Leu Thr Asp Cys Phe Pro Lys Ile Leu Val Asn Ile Leu Pro
271          1285          1290          1295
273 Tyr Phe Ala Tyr Glu Gly Thr Arg Asp Ser Gly Met Ala Gln Gln Arg
274          1300          1305          1310
276 Glu Thr Ala Thr Lys Val Tyr Asp Met Leu Lys Ser Glu Asn Leu Leu
277          1315          1320          1325
279 Gly Lys Gln Ile Asp His Leu Phe Ile Ser Asn Leu Pro Glu Ile Val
280      1330          1335          1340
282 Val Glu Leu Leu Met Thr Leu His Glu Pro Ala Asn Ser Ser Ala Ser
283 1345          1350          1355          1360
285 Gln Ser Thr Asp Leu Cys Asp Phe Ser Gly Asp Leu Asp Pro Ala Pro
286          1365          1370          1375

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DATE: 08/11/2004

PATENT APPLICATION: US/09/462,962

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288 Asn Pro Pro His Phe Pro Ser His Val Ile Lys Ala Thr Phe Ala Tyr
289           1380           1385           1390
291 Ile Ser Asn Cys His Lys Thr Lys Leu Lys Ser Ile Leu Glu Ile Leu
292           1395           1400           1405
294 Ser Lys Ser Pro Asp Ser Tyr Gln Lys Ile Leu Leu Ala Ile Cys Glu
295           1410           1415           1420
297 Gln Ala Ala Glu Thr Asn Asn Val Tyr Lys Lys His Arg Ile Leu Lys
298 1425           1430           1435           1440
300 Ile Tyr His Leu Phe Val Ser Leu Leu Leu Lys Asp Ile Lys Ser Gly
301           1445           1450           1455
303 Leu Gly Gly Ala Trp Ala Phe Val Leu Arg Asp Val Ile Tyr Thr Leu
304           1460           1465           1470
306 Ile His Tyr Ile Asn Gln Arg Pro Ser Cys Ile Met Asp Val Ser Leu
307           1475           1480           1485
309 Arg Ser Phe Ser Leu Cys Cys Asp Leu Leu Ser Gln Val Cys Gln Thr
310           1490           1495           1500
312 Ala Val Thr Tyr Cys Lys Asp Ala Leu Glu Asn His Leu His Val Ile
313 1505           1510           1515           1520
315 Val Gly Thr Leu Ile Pro Leu Val Tyr Glu Gln Val Glu Val Gln Lys
316           1525           1530           1535
318 Gln Val Leu Asp Leu Leu Lys Tyr Leu Val Ile Asp Asn Lys Asp Asn
319           1540           1545           1550
321 Glu Asn Leu Tyr Ile Thr Ile Lys Leu Leu Asp Pro Phe Pro Asp His
322           1555           1560           1565
324 Val Val Phe Lys Asp Leu Arg Ile Thr Gln Gln Lys Ile Lys Tyr Ser
325           1570           1575           1580
327 Arg Gly Pro Phe Ser Leu Leu Glu Glu Ile Asn His Phe Leu Ser Val
328 1585           1590           1595           1600
330 Ser Val Tyr Asp Ala Leu Pro Leu Thr Arg Leu Glu Gly Leu Lys Asp
331           1605           1610           1615
333 Leu Arg Arg Gln Leu Glu Leu His Lys Asp Gln Met Val Asp Ile Met
334           1620           1625           1630
336 Arg Ala Ser Gln Asp Asn Pro Gln Asp Gly Ile Met Val Lys Leu Val
337           1635           1640           1645
339 Val Asn Leu Leu Gln Leu Ser Lys Met Ala Ile Asn His Thr Gly Glu
340           1650           1655           1660
342 Lys Glu Val Leu Glu Ala Val Gly Ser Cys Leu Gly Glu Val Gly Pro
343 1665           1670           1675           1680
345 Ile Asp Phe Ser Thr Ile Ala Ile Gln His Ser Lys Asp Ala Ser Tyr
346           1685           1690           1695
348 Thr Lys Ala Leu Lys Leu Phe Glu Asp Lys Glu Leu Gln Trp Thr Phe
349           1700           1705           1710
351 Ile Met Leu Thr Tyr Leu Asn Asn Thr Leu Val Glu Asp Cys Val Lys
352           1715           1720           1725
354 Val Arg Ser Ala Ala Val Thr Cys Leu Lys Asn Ile Leu Ala Thr Lys
355           1730           1735           1740
357 Thr Gly His Ser Phe Trp Glu Ile Tyr Lys Met Thr Thr Asp Pro Met
358 1745           1750           1755           1760
360 Leu Ala Tyr Leu Gln Pro Phe Arg Thr Ser Arg Lys Lys Phe Leu Glu

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RAW SEQUENCE LISTING ERROR SUMMARY
PATENT APPLICATION: US/09/462,962

DATE: 08/11/2004
TIME: 15:57:03

Input Set : D:\seqlist.txt
Output Set: N:\CRF4\08112004\I462962.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:7; Xaa Pos. 3316
Seq#:10; Xaa Pos. 2,3
Seq#:11; Xaa Pos. 10

VERIFICATION SUMMARY

PATENT APPLICATION: **US/09/462,962**

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Input Set : **D:\seqlist.txt**

Output Set: **N:\CRF4\08112004\I462962.raw**

L:2164 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:7 after pos.:3312

L:2561 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10 after pos.:0

L:2576 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11 after pos.:0